

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

After entry of the foregoing amendments, Claims 1-20 are pending in the present application. Claims 1-9 and 12 are canceled without prejudice or disclaimer; and Claims 10, 11, 13, 15, and 20 are amended, without introduction of new matter, by the present amendment.

In the outstanding Office Action, Claims 1-9 were rejected under 35 U.S.C. 112, second paragraph; Claims 1, 4, 9-12, and 16 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent Application Publication No. 2002/0000771A1 to Ge et al. (hereinafter “Ge ‘771”) in view of U.S. Patent No. 6,683,415 to Compaint et al. (hereinafter “Compaint”) and JP 07-326306 to Hisafumi; Claims 6 and 13 were rejected under 35 U.S.C. 103(a) as unpatentable over Ge ‘771 in view of Compaint, Hisafumi, U.S. Patent No. 5,859,508 to Ge et al. (hereinafter “Ge ‘508”), and JP 10-083778 to Clifford et al.; Claims 7 and 14 were rejected under 35 U.S.C. 103(a) as unpatentable over Ge ‘771 in view of Compaint, Hisafumi, and U.S. Patent No. 5,726,529 to Dean; Claims 8 and 15 were rejected under 35 U.S.C. 103(a) as unpatentable over Ge ‘771 in view of Compaint, Hisafumi, and Ge ‘508; Claims 17-19 were rejected under 35 U.S.C. 103(a) as unpatentable over Ge ‘771 in view of Compaint and Dean; and Claim 20 was rejected under 35 U.S.C. 103(a) as unpatentable over Ge ‘771 in view of Compaint, Dean, and Ge ‘508.

Regarding the rejection of Claims 1-9 under 35 U.S.C. 112, second paragraph, the rejection is moot in view of the cancellation of those claims.

Turning now to the above-noted rejections of Claims 1-20 under 35 U.S.C. 103(a) as unpatentable over Ge ‘771, summarized above, the rejections of Claims 1-9 are moot in view of the cancellation of those claims. The rejections of Claims 10-20 are respectfully traversed.

Applicants first address the rejections of Claim 10-16.

Amended independent Claim 10 recites first and second substrates opposed across a gap; a grid provided between the first and second substrates and including first and second surfaces opposing the first and second substrates, respectively; first spacers set up on the first surface of the grid; and second spacers set up on the second surface of the grid and abutting against the second substrate. As Claim 10 now recites the subject matter of canceled Claim 12, the first spacers are recited as being shorter than the second spacers in height. Claims 11-16 depend from Claim 10.

With respect to canceled Claim 12, the Office Action states:

The examiner notes that [Ge '771's] cathode spacer is 10 to 500 microns. Therefore then choose 510 microns or 501 microns which is 0.51 or 0.501 mm which is about 500 microns. The examiner notes that [Ge '771's] anode spacer is about 0.5 mm. Therefore the cathode spacer (second spacer)¹ can be chosen to have greater height then the anode spacer (first spacer).¹

Even assuming *arguendo* that the cathode spacer 56 “can be chosen” to have a height greater than 500 microns, Ge '771 teaches that the cathode spacer 56 has a lesser height than the anode spacer 60. More particularly, in the cited portion of Ge '771, the reference teaches that “the spacing between layer 50 and the cathode substrate [i.e., the height of the cathode spacer 56] is of the order of ***about 10 to 500 microns***, and more preferably about 30 to 250 microns;” and teaches that “the anode spacers 60 preferably have heights such that layer 50 and anode 32 are spaced apart by ***not less than 0.5 millimeters*** [i.e., not less than 500 microns], and more preferably by not less than 1 millimeters.”² Thus, Ge '771 suggests that the height of the anode spacer 60 (cited as teaching the first spacer) should not be less than the maximum height of the cathode spacer 56 (cited as teaching the second spacer). If the cathode spacer 56 were 501 microns in height, then the anode spacer 60 would simply be greater than 501 microns in height (e.g., preferably 1000 microns).

¹ Office Action, 03/08/2005, page 9.

² Ge '771, para. 19.

Indeed, in each figure illustrating the cathode and anode spacers 56, 60, the height of the anode spacer 60 is notably greater than the cathode spacer 56. According to MPEP § 2144.05:

When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. ... However, the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art.

In view of Ge '771's written and illustrative description of the anode and cathode spacers 60, 56 one skilled in the art would not reasonably conclude that the anode spacer 60 is shorter in height than the cathode spacer 60. Thus, the anode and cathode spacers 60, 56 cannot teach the claimed first and second spacers, respectively.

Accordingly, for the above-stated reasons, Applicants respectfully request that the rejections of Claims 10-16 under 35 U.S.C. 103(a) as unpatentable over Ge '771, summarized above, be withdrawn.

Applicants now address the rejections of Claims 17-20.

Amended independent Claim 17 recites first and second substrates opposed across a gap; a grid provided between the first and second substrates and including first and second surfaces opposed to the first and second substrates, respectively; first spacers set up on the first surface of the grid and abutting against the first substrate; and second spacers set up on the second surface of the grid and abutting against the second substrate. Claim 17 further recites that the second spacers have a surface resistance lower than the surface resistance of the first spacers. Claims 18-20 depend from Claim 17.

The outstanding Office Action acknowledges that the asserted combination of Ge '771 in view of Compain fails to teach the claimed "second spacers [having] a surface

resistance lower than the surface resistance of the first spacers.”³ In view of that deficiency the Office Action states:

Dean et al. in the analogous art teaches wherein the second spacers have a surface resistance (ref. 212 sheet resistance greater than 10^{10} ohms/square) lower than a surface resistance of the first spacer (ref. 218 sheet resistance greater than 10^{10} ohms/square). Additionally, Dean et al. teach incorporation of such a second spacer surface resistance lower than a surface resistance of the first spacer to improve the reducing of electrical charging at its surfaces, which reduces power losses within the display, and which is easily and economically fabricated (col. 2, lines 12-15).⁴

Applicants cannot discern whether the asserted motivation to incorporate Dean's “second spacer surface resistance” is cited as suggesting the substitution of Dean's lower resistive region 220 for Ge '771's cathode spacer 56; or, alternatively, cited as suggesting the inclusion of Dean's resistive coating 212 on Ge '771's cathode spacer 56. In either respect, for at least two reasons, the cited motivation does not modify Ge '771 and Compaint to produce the claimed invention.

First, Dean's lower resistive region 220 is not set upon a surface of a grid. In that respect, the asserted modification of Ge '771 and Compaint in view of Dean does not teach the claimed “second spacers set up on the second surface of the grid.” Second, as Dean's lower resistive region 220 is separated from the cathode 114 by the conductive pad 120 (e.g., see Figure 2), the asserted modification cannot produce the claimed “second spacer...abutting against the second substrate.”

With respect to the second distinction, Applicants note that each figure of Dean shows both the lower resistive region 220 and the resistive coating 212 as separated from the cathode 114 by the conductive pad 120. Dean also states, “[W]hen primary electrons impinge upon lower resistive region 220, they are bled off of lower resistive region 220 and into conductive pad 120, which is connected to ground.”⁵ Thus, as the conductive pad 120 is

³ Office Action, 03/08/2005, page 16.

⁴ Office Action, 03/08/2005, page 16.

⁵ Dean, column 4, lines 13-18.

described as a necessary counterpart of the lower resistive region 220, any modification of Ge '771 and Compaint to include the resistive coating 212 must also modify Ge '771 and Compaint to include the conductive pad 120. Such a modification cannot teach the claimed columnar second spacers abutting against the second substrate (because the conductive pad 120 would be arranged between the spacers and substrate).

Accordingly, for the above stated reasons, Applicants respectfully request that the rejection of Claims 17-20 under 35 U.S.C. 103(a) as unpatentable over Ge '771, summarized above, be withdrawn.

With respect to amended dependent Claims 15 and 20, Applicants further note that none of the applied references teach the claimed feature "wherein the surface of the grid and the inner surface of each beam passage apertures ... have a resistance set to $E + 8 \Omega/\square$."⁶ Accordingly, Applicants respectfully submit that Claims 15 and 20 further patentably define over the applied references.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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⁶ For support, see Applicants' specification, page 9, lines 21-27.